Oregon
Kate Brown, Governor

Department of Environmental Quality
Northwest Region
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5263
FAX (503) 229-6945
TTY 711

August 22, 2016 electronic delivery

David Harvey
Director of Environmental, Health and Safety
The Greenbrier Companies
1 Centerpointe Drive
Lake Oswego, OR 97035

RE: DEQ Comments on Updated Groundwater Source Control Evaluation
Gunderson site
ECSI #1155

Dear Dave:

Thank you for the timely submittal of the Updated Groundwater Source Control Evaluation, prepared on your behalf by Cascadia Associates and dated May 31, 2016. In general, DEQ found the document did a good job of evaluating the most recent data available for the Gunderson site and incorporating EPA's statistical tool for evaluating contaminant trends in groundwater. We do, however, have a few comments to pass along, which will make the document stronger and support a favorable source control decision by DEQ for the groundwater pathway.

EPA also provided comments (attached), most of which are reflected in DEQ's comment set below. DEQ disagrees with portions of EPA's Primary Comments 1b and 1f. DEQ is not requesting Gunderson to provide an estimate of the mass of VOCs discharging to the river through groundwater, because this request in 1b is not in line with the 2005 EPA/DEQ Joint Source Control Strategy. In our comment on Section 3.3.4, DEQ offers an initial step for evaluating Total Petroleum Hydrocarbons (TPH) at the site, to determine if the additional analysis for the aliphatic C10-C12 range requested in EPA's comment 1f is needed.

General Comments

1. Data screening is presented by first calculating exceedance quotients in comparison to Portland Harbor Screening Level Values (SLVs) from Table 3-1 of the 2005 EPA/DEQ Joint Source Control Strategy (JSCS) and then by discussing exceedances of EPA Portland Harbor Preliminary Remediation Goals (PRGs) for Remedial Action Objectives (RAOs) 4 or 8, as well as other values, including EPA Regional Screening Levels (RSLs) and EPA Maximum Contaminant Levels (MCLs) for drinking water. Overall, this results in a conservative evaluation and creates confusion with regard to the proper weight that should be given to the various lines of evidence.
    a. Data screening should be presented using the following hierarchy:
        i. EPA Portland Harbor PRGs for RAOs 4 and 8 (for contaminants that have both, please use the lowest of the two values), as most recently published in EPA's draft Feasibility Study;
        ii. For any contaminants that don't have PRG values associated with RAOs 4 and 8, use the lowest PRG associated with RAOs 3 and 7;
        iii. For any contaminants that don't have PRG values associated with RAOs 3, 4, 7 or 8, use Portland Harbor SLVs from Table 3-1 of the 2005 EPA/DEQ JSCS;
        iv. If desired for use as additional lines of evidence, EPA RSLs and EPA MCLs for drinking water.

    This will affect evaluations throughout the report of exceedance ratios and various contaminant lines and weights of evidence.

    b. All data tables should include the applicable PRGs or SLVs.

2. While DEQ agrees with the refinement over the years to focus on specific groundwater contaminants found in specific areas of the site, the data collected for all contaminants should be presented and discussed encompassing all areas of the site and estimated plume maps should be developed and presented. Specifically needed, are complete VOC data in Area

3, metals data in Area 1 and TPH data in all site areas. To the extent that certain contaminant classes were excluded from analysis, justification should be provided. While unlikely to change the conclusions presented in the report, inclusion and evaluation of these missing data is needed to support a comprehensive source control decision for the groundwater pathway.

3. The SCE should identify groundwater issues and their resolution as part of the 2014 Shell Terminal and pipeline source control decision.

4. The potential for facilitated transport of contaminated groundwater to the river in or around utility lines is not addressed by the report. Typically, sites present information regarding the elevation of utility pipes in comparison to seasonal high groundwater elevation as a starting point. Where utilities or stormwater conveyances are present within the saturated zone and contaminated groundwater is present, evaluation of the potential for infiltration into pipes or groundwater transport to the river along pipe bedding is necessary. Multiple lines of evidence are typically considered in making a determination on source control via this transport pathway.

5. The report must be signed and stamped by an Oregon registered geologist.

Section Specific Comments

Section 2.1 – The reader is referred to Figure 2 after a list of the properties bordering the site, but the properties are not identified on the figure. Either the properties should be added to the figure or reference to the figure should be deleted.

Section 3.0 – These subsections should be revised to reflect the screening value hierarchy and additional data inclusion requested in General Comments 1 and 2 above.

Sections 3.2 and 3.3 – In assessing the significance of metals detected in groundwater, consider adding discussion/evaluation of soil data in select areas, including comparison to DEQ regional background concentrations for metals (found in DEQ's March 2013 Technical Report on Development of Oregon Background Metals Concentrations in Soil) as an additional line of evidence, as needed. If metals are found to be elevated in groundwater, but have not been observed to be elevated in site soil, this can provide a line of evidence that groundwater contamination is either naturally-occurring or from a non-site source.

Section 3.3.2 –

Background Wells - Because monitoring wells MW-22, MW-24 and MW-42 are located within an active industrial area in proximity to rail lines and roadways, it is unlikely that results from these wells can be considered actual background. Indeed, dissolved arsenic concentrations in these wells exceed PRGs. While DEQ supports the comparison of results from these lesser affected wells to those in other site wells, a more appropriate designation here and in later conclusions may be "site-related" or "non-site-related."

Arsenic – Because arsenic concentrations in many site wells (most prominently MW-66, MW-76 and MW-77) significantly exceed the PRG and results from "non-site-related" wells, additional lines of evidence are needed to support the conclusion that groundwater arsenic is not from site sources.

Section 3.3.3 – Area 2 – TCE detections in the Area 2 monitoring well SMW-12 represent the highest detections on the site. Calculating exceedance ratios based on the PRG improves the evaluation, but still indicates exceedances of the PRG by 1 to 2 orders of magnitude. DEQ considers the source of contamination at this location as unknown and poorly-bounded. The presentation of additional information is necessary to support the conclusion in Section 4.0 that contamination does not represent a significant source control concern.

Section 3.3.4 – DEQ clarified with EPA that the most recent PRG for TPH of 2.6 ug/L is for aliphatic TPH in the C10-C12 range. As this is a new PRG, groundwater at the site was not characterized for this parameter. DEQ requests that the updated SCE discuss TPH detections in relation to DEQ's Water Quality standard of 1 mg/L. This discussion should include the conceptual site model for the presence of detected TPH, frequency of occurrence and nature of TPH detections, trends, down-gradient well presence, in-river sheen observations and other potential lines of evidence. In consideration of this evaluation, DEQ will determine whether or not analysis of TPH in the aliphatic C10-C12 range is necessary to support the source control decision.

Figures 3 through 6 – While plotting the exceedance ratios gives a good snapshot of conditions in various areas on the site, it can sometimes misrepresent the situation. This is best illustrated by VOC exceedance ratios for Area 1 presented on Figure 6, which appear quite high despite measured concentrations being typically less than 1 ug/L. Re-plotting based on comparison of exceedances to PRG values may help, but consider adding actual concentrations where that would be helpful to tell the whole story. Improved plots, in combination with Area 1 contaminant trend evaluations and text, will better illustrate ongoing contaminant degradation.

Appendix B –

a. It would be helpful to have a short section explaining the process of the statistical evaluation and expanding on the short summary, presented on page 20 that refers to Appendix B, as to rationale for well/data selection. Discussion should be included (either in the appendix or in Section 3.3.3) as to contaminant trends that are flat or modestly upward being typically in the low ug/L concentration range.
b. Input data tables are not included for each plot.
c. Each page includes a footer the reads "Draft version – do not distribute," which should be eliminated.

Please prepare a revised evaluation report for the groundwater pathway at the site, which addresses DEQ and EPA comments, for submittal within 30 days of receipt of this letter. As always, feel free to contact me to discuss any of these comments or other elements of the source control process at your site.

Sincerely,

L. Alexandra Liverman
Portland Harbor Stormwater Coordinator

Attachment: EPA comments

ec: Chris Breemer, Cascadia Associates
Dan Hafley, DEQ
Eva DeMaria, EPA

cc: ECSI #1155